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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/824,576

04/15/2004

Norifumi Shukunami

1448:1057

6562

21171

7590

10/23/2006

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EXAMINER

HUGHES, DEANDRA M

ART UNIT

PAPER NUMBER

3663

DATE MAILED: 10/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/824,576

Applicant(s)

SHUKUNAMI ET AL.

Examiner

Deandra M. Hughes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4-9 and 12-18 is/are pending in the application.
- 4a) Of the above claim(s) 5-7 and 13-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,8,9,12 and 16-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The amendment filed 7/31/06 has been entered.

### ***Specification***

2. The amendment to the abstract of the disclosure (dated 7/31/06) has been entered.
3. The amendments to the specification (dated 7/31/06) has been entered.

### ***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 1, 4, 8-9, 12, and 16-18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Gerrish (US 2001/0040720 published Nov. 15, 2001).

With regard to claim 1, Gerrish discloses:

- an input power detecting unit (fig. 1A, #32) that detects an input power of an optical signal;
- an output power detecting unit (#34) that detects an output power of the optical signal;
- an optical amplifying unit (#20) that amplifies the optical signal;
- a change factor detecting unit (#48B) that detects a factor (e.g., the temperature) that causes a gain of the optical amplifying unit to change (paragraph [0019]);

- and a control unit that (#100) provides a control, based on the input power, the output power, and the factor, so that the gain of the optical amplifying unit is a predetermined value (col. 2 of paragraph [0017]);
- *wherein the change factor detecting unit detects a value of a factor that depends upon the input power of the optical signal; and*
- *the control unit uses a result of addition of the factor and the input power to provide control (note algorithms in paragraphs [0022]-[0044]).*

Or if it is held that the Gerrish does not specifically disclose that said factor is the temperature, it is well-known that an fluctuation in power results in a corresponding temperature change. In paragraph [0019], Gerrish discloses that “control calculations...of problematic conditions such as,...high temperature, low temperature” are processed in the control algorithm. Increased input power is an increase in the number of photons entering the fiber. Photons are bundles of light energy. Heat is energy. Therefore, an increased number of photons results in increased temperature and vice versa. Consequently, It would have been obvious to one of ordinary skill in the art (e.g. an optical engineer) at the time the invention was made to conclude that a factor of input power would be temperature for the advantage of providing an accurate control algorithm.

The Examiner considers the claim language identified in italics above to be a functional limitation, i.e. intended use. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function alone. Since the structural

limitations have been met by the prior art, the Examiner has reason to believe that the functional limitation can be performed by the prior art structure. See MPEP 2114.

With regard to claim 4, the temperature depends on the input power of the optical signal. See discussion above regarding photons and temperature.

With regard to claim 8, the excitation laser diode is #22. Paragraph [0024] discloses power control of the laser diode pump.

Claims 9-12 and 16 are merely the method of normal operations of claims 1-4 and 8, respectively.

With regard to claims 17-18, #65 and #65A detect and control the temperature of the amplifier. See also paragraph [0020] for disclosure of the temperature control.

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of


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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deandra M. Hughes whose telephone number is 571-272-6982. The examiner can normally be reached on M-F, 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Deandra M. Hughes  
Primary Examiner  
Art Unit 3663